

**RESPONSES TO
EPA Comments on the Redlined Draft Final RI for Site 7-Enclosure 2**

COMMENT 1: **Executive Summary, page 8, shaded part of text.** This statement is not clear. Please clarify what the writer's main point is in this section.

RESPONSE: Although no substantial upward vertical gradients were calculated from the water level data for the shallow and deep well pairs, there appears to be an upward flow of at least a portion of the VOC plume from the deep zone to the shallow zone in the vicinity of MW07-19S/D, -21S/D, and -26S based upon the salinity and VOC in ground-water data.

COMMENT 2: **Executive Summary, page 9.** The last sentence of the first paragraph suggests that interpretation of flow pathways in several areas were determined by numerical modeling. Only one profile model is presented in Appendix J1, and its location is not known.

RESPONSE: On page 3-10 for the draft final RI report the following is stated regarding the cross sections used in the SUTRA modeling to evaluate the impact from a saline/salt-water wedge: "The model was applied at Site 07 along two cross-sections. The first extended in a west to east direction across Site 07 from the vicinity of MW07-14 to Narragansett Bay. This cross-section was a composite using geological cross-section B-B' (Figure 3-4) from well MW07-22 to MW07-03, and then interpolated over to cross-section C-C' (Figure 3-5) at the mid-point between wells MW07-09 and -18. The model cross-section extended 900 ft beyond the shoreline into Narragansett Bay.

The second model cross section (north-south) made use of geological cross-section H-H' (Figure 3-9) which extends from MW07-07 through -14, -27, -19, and -21. The second model cross-section extends 750 ft beyond the Allen Harbor shoreline."

COMMENT 3: **Chapter 4, page 10.** The discussion of the borehole logging results under MW07-10D states that deep ground water in the till is fresh. The log indicates an increase in electrical conductivity, suggesting an increase in salinity. The well screen is above the high salinity portion of the groundwater, therefore the deeper water is actually more salty than the groundwater from the screened area shows.

RESPONSE: The following sentence will be added between the two existing sentences:
The lower portion of the conductivity log indicates an increase in salinity, i.e. the ground water below the screened interval of this well is saltier than the water in the screened interval._

COMMENT 4: **Chapter 4, page 10.** The discussion under MW07-21D references wells MW07-19S/D/R. It appears that reference should be to wells MW07-21S/D/R.

RESPONSE: The typo MW07-19S/D/R and MW07-19S will be changed to MW07-21S/D/R and MW07-21S.

COMMENT 5: **Chapter 4, page 11.** Discussions of logging results for two wells made a point of the fact that zone that had the freshest water and was potentially contaminated was being monitored in the well nest. In the discussion of MW07-24D a statement could be included that the zone with the freshest water was not being monitored.

RESPONSE: The MW07-24D description will be revised to read: The logs indicate the presence of salt water in the shallow ground-water zone and in the lower portion of the deep ground water (till) zone (where this well is screened - approximately 43 to 53 ft bgs), but the upper portion of this zone (just beneath the silt unit) appears to be "fresher", less saline (approximately 30 to 35 ft bgs).

COMMENT 6: **Chapter 4, page 11.** Delete the statement "of the USGS" under the first bullet of conclusions. (See also the first comment on Appendix J)

RESPONSE: "of the USGS" will be deleted.

COMMENT 7: **Figure 4-4 to 4-10.** We suggest including a sample-collection date on these sections.

RESPONSE: The following will be added to each of these figures: "July-August and October-November 1995".

COMMENT 1: **Appendix J1.** The last page was prepared by the USGS for internal use to stimulate discussions of the data. We request that this page be removed. If Navy concurs with the observations presented in the statement, they are welcome to include them in the report, but reference to USGS must be removed since the document in question was for internal use only.

RESPONSE: The page will be removed.

COMMENT 8: **Appendix J1. Figure 1** is useful for formulating a conceptual model of the site. However, it is not clear what part of the study area is represented by this section and what properties were assigned to the various geologic units. Also, we suggest that consideration be given to running the model for a simulation period longer than one month to approach a steady state condition. There is confusion on the length of the simulation period; figure

1 states one month and table 3 states 1 year. The lengths of the flow lines on Figure 1 suggest that at least one year was simulated. Finally, it is not clear from the information presented if bedrock was part of the simulation.

RESPONSE: As presented in the report, the SUTRA model was not capable of creating a salinity intrusion under Site 07 on its own. This was due to the sensitivity of wedge formation to the ocean boundary condition, for which there was no data. For the particle tracking results presented in the report, the initial salinity distribution was assumed based upon site data. This model set-up, when executed in transient mode, was unstable, and after 1 year showed that the salinity intrusion was already being pushed back out towards the ocean. Although the model was executed for 1 year, the flow field used for displaying the flow paths was taken after 1 month so that the results would be representative of the observed salinity condition.